DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-011856
Date Inspected: 02-Feb-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 1000
OSM Departure Time: 1630
Location: Clackamas, OR

CWI Name: M. Gregson, J. Salazar, G. Mundt

CWI Present:	☑ Yes	☐ No					
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 6 (ESW Overlay Process)
Hinge-K Pipe Beam Fuse Assembly 120A-8
The QA Inspector witnessed welder WID #F17, Mr. Igor Frolov, performing electro slag welding (ESW) on the third layer welding passes, in the flat position. The QA Inspector noted that the third layer pass was now approximately 50% complete and Soudokay brand Soudotape 316L stainless steel consumable strip, was being utilized. The QA Inspector randomly noticed QC Inspector Jose' Salazar was present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QC Inspector Salazar explained to the QA Inspector that welding amperage was previously recorded at 1300 amps/25.8 volts, travel speed at 267mm/min. and a pre-heat temperature recorded at approximately 150 degrees Fahrenheit (66 C). The QA Inspector verified the welding parameters and the minimum pre-heat temperatures were in compliance with the applicable WPS 7003. The QA Inspector verified Mr. Igor Frolov was currently qualified for this welding process and position. The QA Inspector noted that the ESW being performed appeared to be in compliance with WPS 7003.
The QA Inspector was present on this swing shift and witnessed WID#V7, Mr. Vincent Vue continuing to perform electro slag welding (ESW) on the third layer ESW welding passes, utilizing the 316L stainless steel consumable strip, in the flat position. The QA Inspector randomly noticed QC Inspector Gary Mundt was present, to verify

in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QC Inspector Mundt explained to the QA Inspector that welding amperage was previously recorded at 1300 amps/25 volts, travel speed of 267mm/min. and a pre-heat temperature recorded at 100 degrees Fahrenheit (38 C). The QA Inspector randomly verified pre-heat temperature of approximately 100 degrees Fahrenheit (38 C) and noted that the ESW being performed, appeared to be in compliance with the applicable welding procedure specification (WPS) 7003. See attached pictures below.

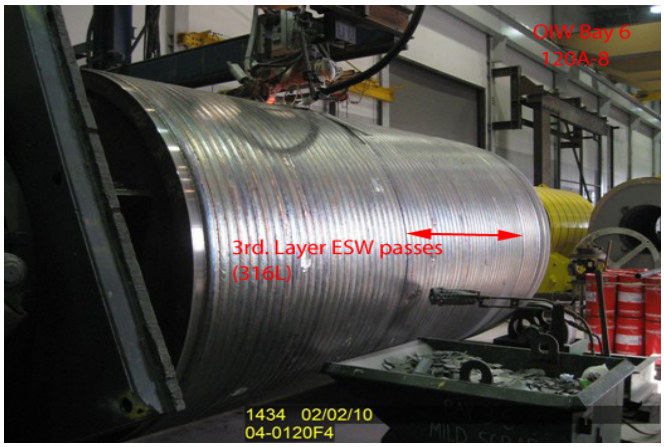
Hinge-K Pipe Beam Assembly 102A-3

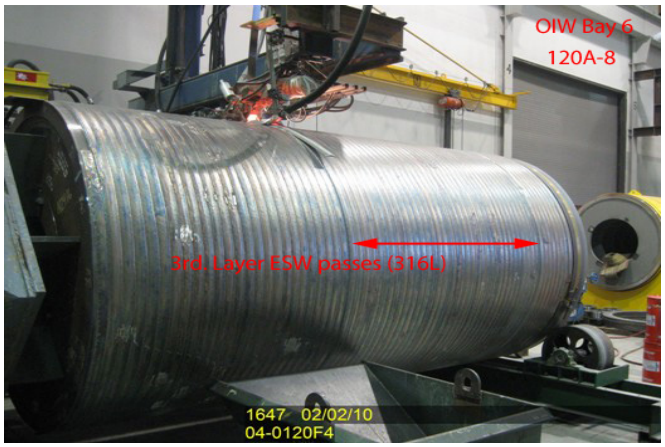
The QA Inspector was notified by OIW QC Inspector Jose' Salazar that WID #O6 (Tim O'Brian), was in process of performing the Flux-core Arc Welding (FCAW) on the Critical Weld Repairs (CWR's) #2244-011 and #2244-020. QC Inspector Salazar explained that the FCAW is being performed in compliance with the OIW approved Welding Procedure Specification (WPS) 3051 and WPS 3048. QC Inspector Salazar explained that he will be present during the entire shift to continuously monitor welding parameters (amps/volts) and pre-heat temperatures, during the CWR's. QC Inspector Salazar later explained that the welding parameters (amperage/voltage) were recorded as 265 amps/26.5 volts, utilizing WPS 3051 and 230 amps/24 volts, utilizing WPS 3048. QC Inspector Salazar explained that pre-heat temperatures of 350 degrees Fahrenheit were verified and the FCAW had been performed in the flat and vertical positions. QC Inspector Salazar explained that after the FCAW was complete, post heat was continuously applied to the CWR's, in accordance with the CWR Specific Instructions. The QA Inspector noted that this was 230-315 degrees C (446-600 F), for 2 hrs.

The QA Inspector was notified by OIW swing shift QC Inspector Gary Mundt that WID #B10 (Liem Bui), was in process of setting up, to perform Critical Weld Repairs #2244-015, #2244-019, #2244-009 and #2244-016. QC Inspector Mundt explained that the FCAW will be performed to the OIW approved Welding Procedure Specification (WPS) 3051. QC Mundt explained that he will be present during the entire shift to continuously monitor welding parameters (amps/volts) and pre-heat temperatures, during the CWR's. QC Inspector Mundt explained that WID #B10 currently has a copy of the approved WPS and the QA Inspector verified this.

Material, Equipment, and Labor Tracking (MELT)

QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 3 OIW production personnel and 2 QC Inspectors.





WELDING INSPECTION REPORT

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Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer